

#### 4A. INJURIES IN COAL MINING

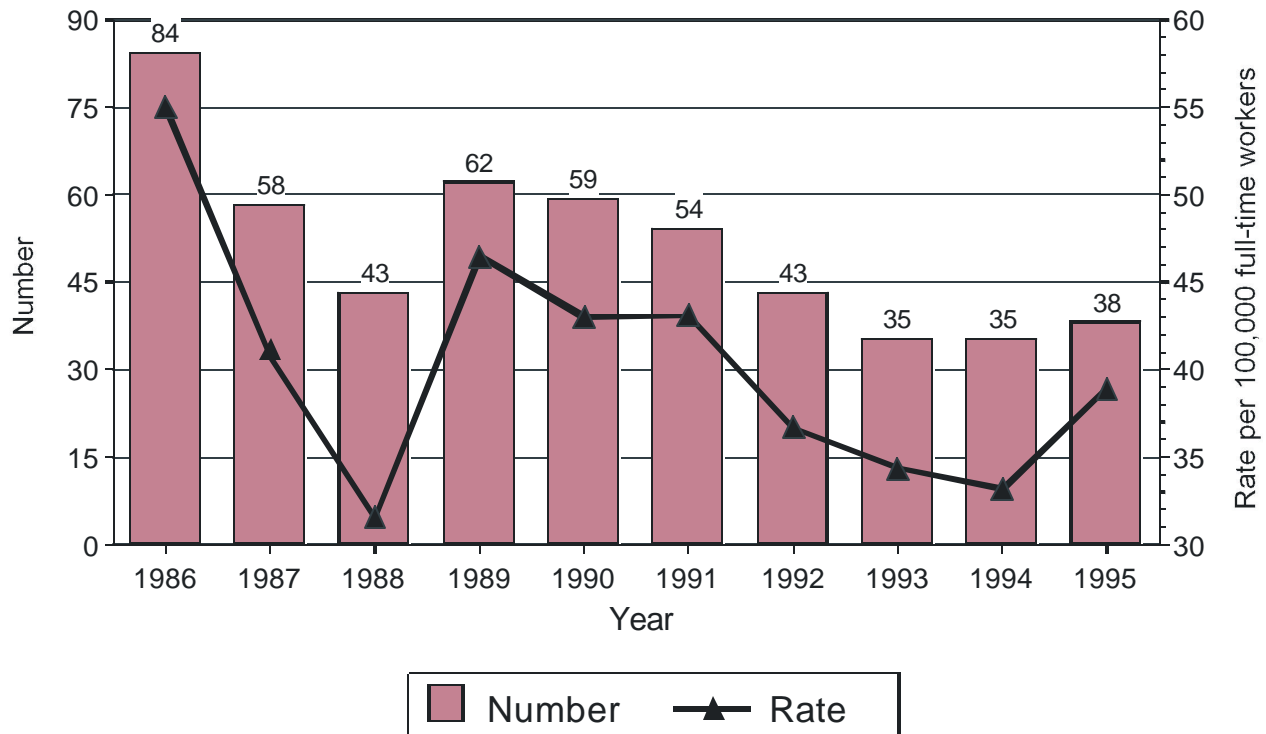


Figure 4A-1.—Coal operators: number and rate (per 100,000 workers) of fatal injuries by year, 1986-1995.  
(Source: MSHA data)

Table 4A-1.—Coal operators: number and average annual rate (per 100,000) workers of fatal injuries by subunit, 1986-1995.

<u>Mining operation</u>	<u>Number, 1986-1995</u>	<u>Average annual rate per 100,000 full-time workers</u>
<b>Underground mines:</b>		
Underground operations	337	55.68
Surface operations	31	49.96
<b>Surface mines:</b>		
Strip	99	23.39
Auger	1	*
Culm Bank	2	*
Dredge	0	*
Independent shops/yards	2	*
Preparation Plants	39	27.5
Office	0	*
<b>Total</b>	<b>511</b>	<b>38.86</b>

\* Rate not calculated because there were fewer than 3 fatalities

Source: Mine Safety and Health Administration data.

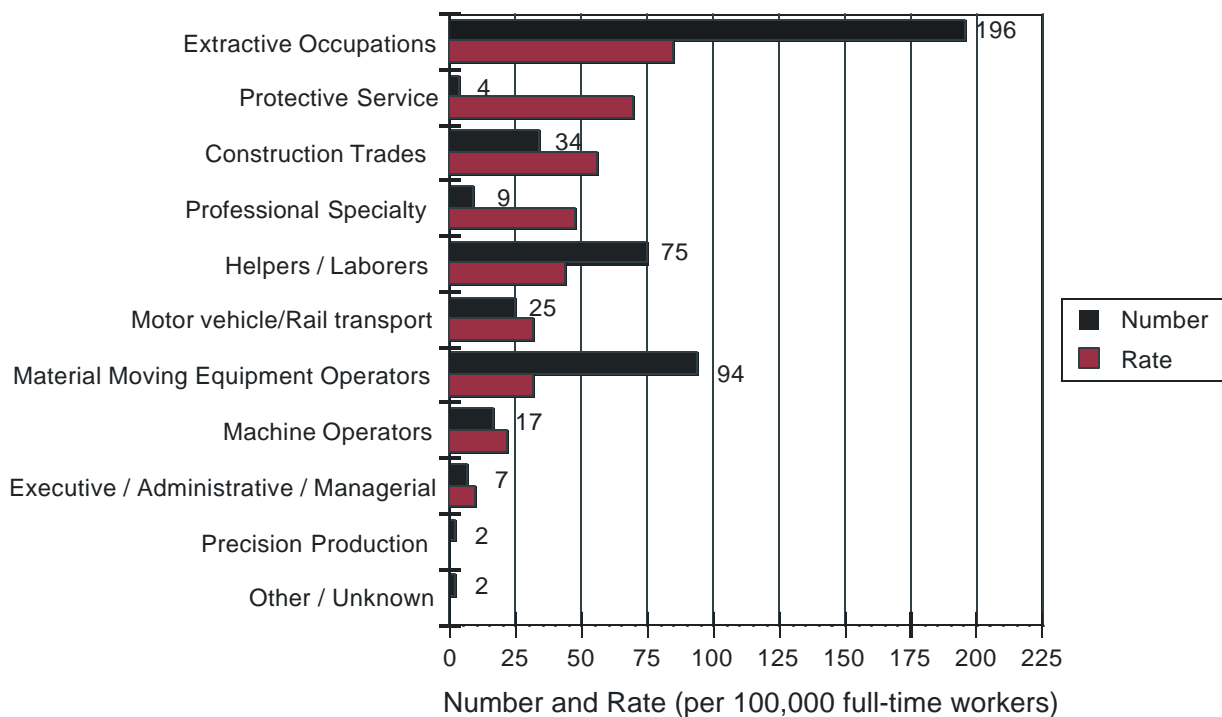


Figure 4A-2.—Coal operators: number and rate (per 100,000 workers) of fatal injuries by U.S. Bureau of the Census Occupation Division, 1986-1995. (Source: MSHA data)

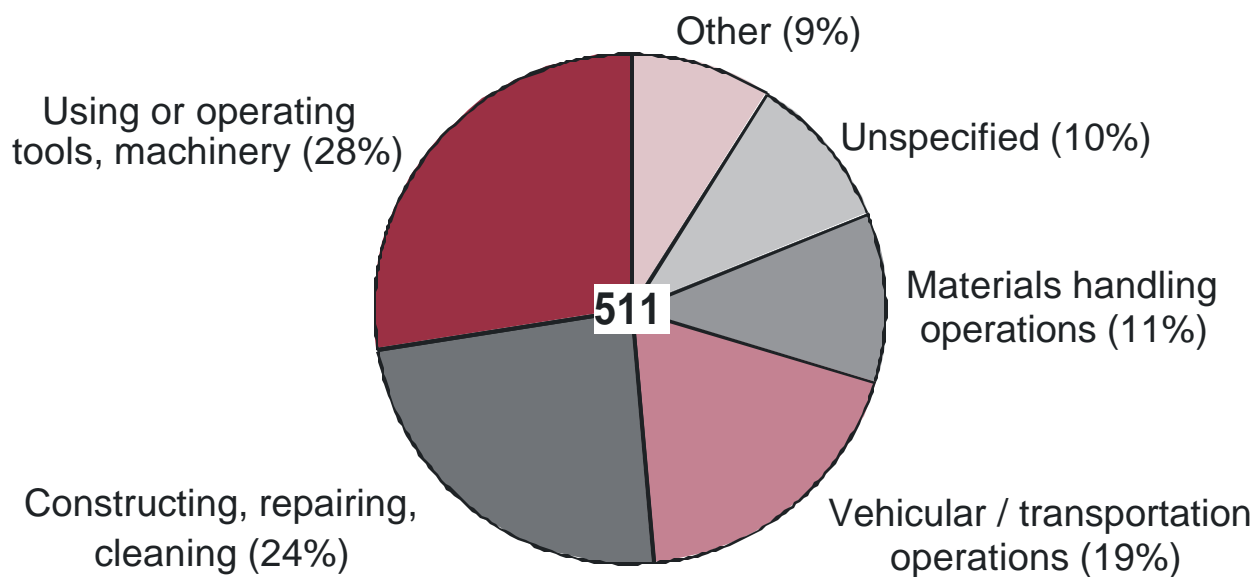


Figure 4A-3.—Coal operators: percent of fatal injuries by work activity, 1986-1995. (Source: MSHA data)

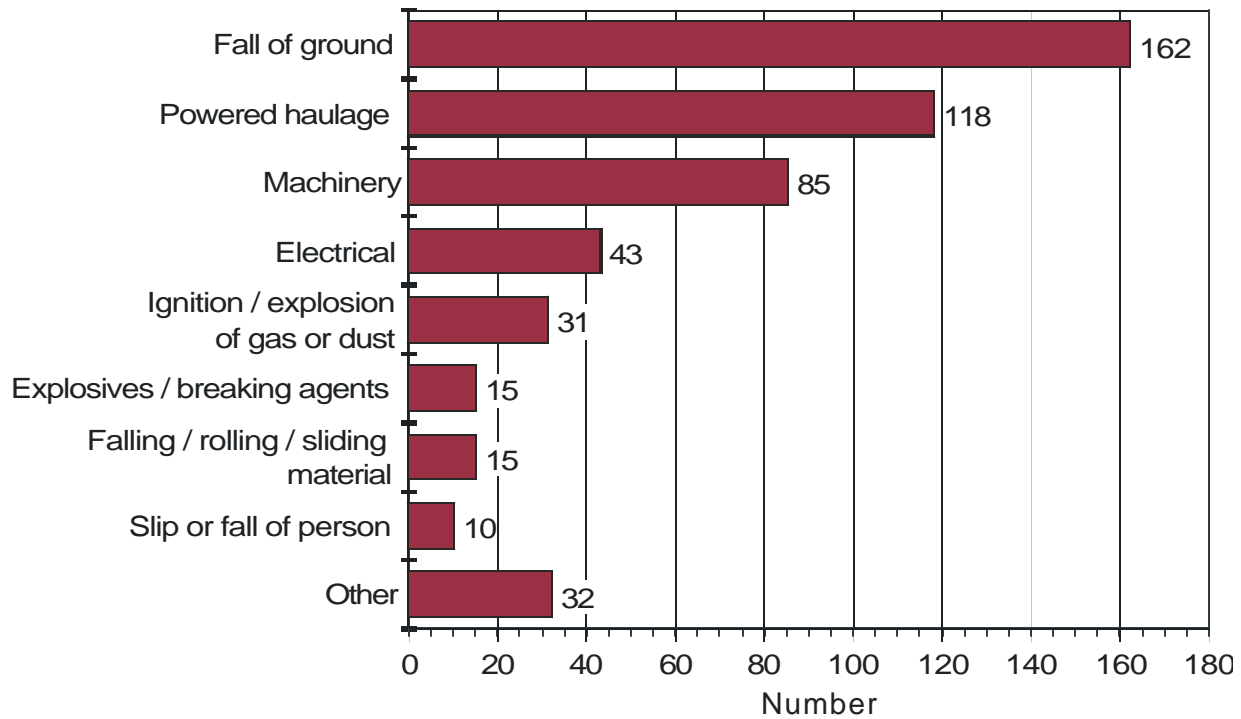


Figure 4A-4.—Coal operators: number of fatal injuries by MSHA accident classification, 1986-1995. (Source: MSHA data)

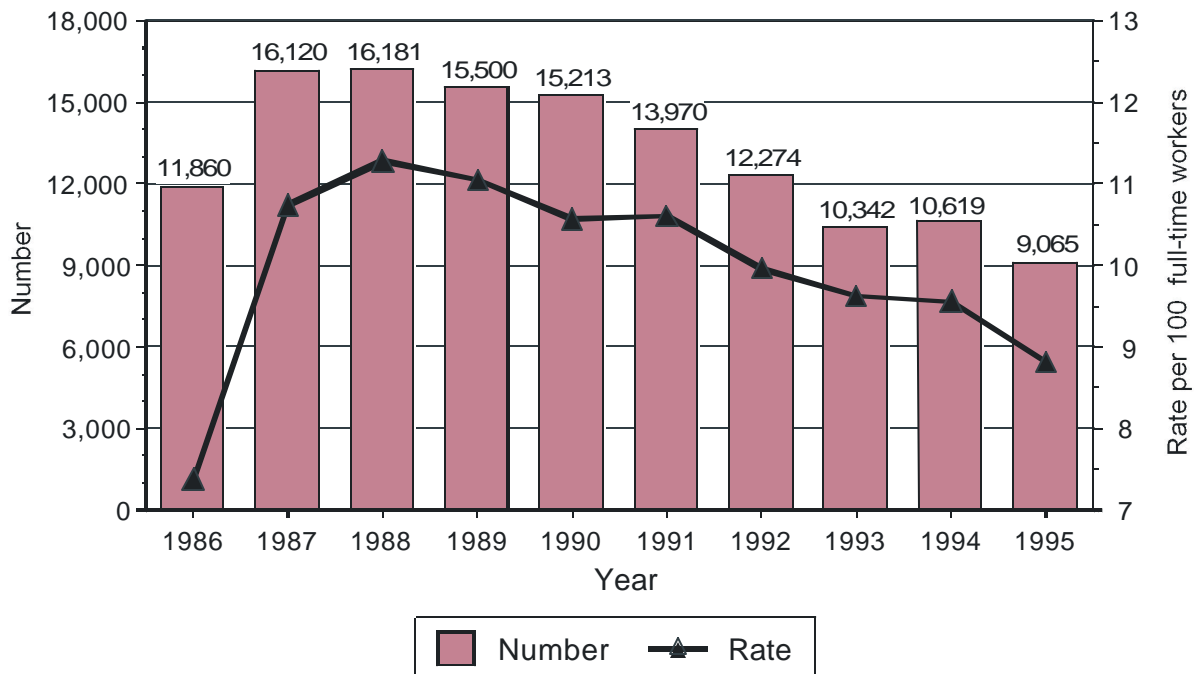


Figure 4A-5.—Coal operators: number and rate (per 100 workers) of nonfatal injuries by year, 1986-1995. (Source: MSHA data)

Table 4A-2.—Coal operators: number and average annual rate (per 100 workers) of nonfatal injuries by subunit, 1986-1995.

<u>Mining operation</u>	<u>Number, 1986-1995</u>	<u>Average annual rate per 100 full-time workers</u>
<b>Underground mines:</b>		
Underground operations	91,011	15.04
Surface operations	6,784	10.93
<b>Surface mines:</b>		
Strip	21,388	5.05
Auger	266	8.14
Culm Bank	286	8.7
Dredge	19	3.62
<b>Independent shops/yards</b>	870	8.4
<b>Preparation Plant</b>	10,234	7.22
<b>Office</b>	286	0.44
<b>Total</b>	<b>131,144</b>	<b>9.97</b>

Source: Mine Safety and Health Administration data.

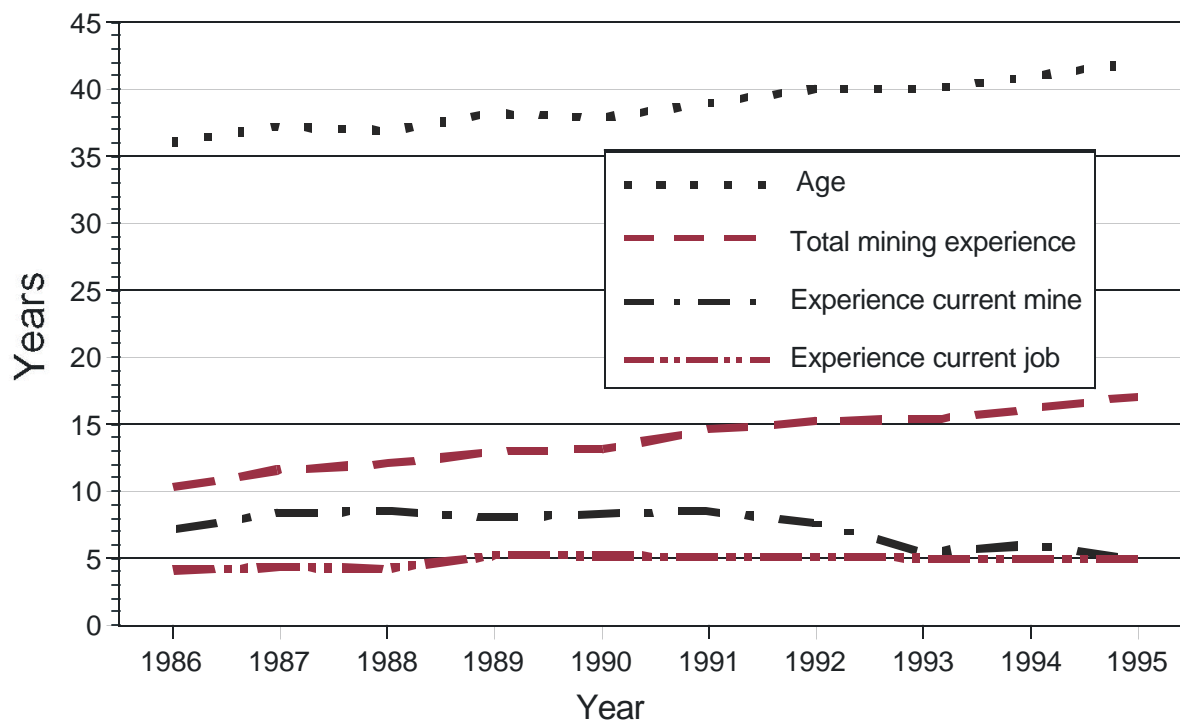


Figure 4A-6.—Coal operators: median values for age, total mining experience in current mine, and experience in current job for workers with nonfatal injuries by year, 1986-1995. (Source: MSHA data)

**Table 4A-3.—Coal operators: nonfatal injuries, 1986-1995, by nature of injury. Number of cases, percentage of cases with one or more lost workdays, mean days lost work per case, total days work lost for all cases, and statutory days charged for all cases.**

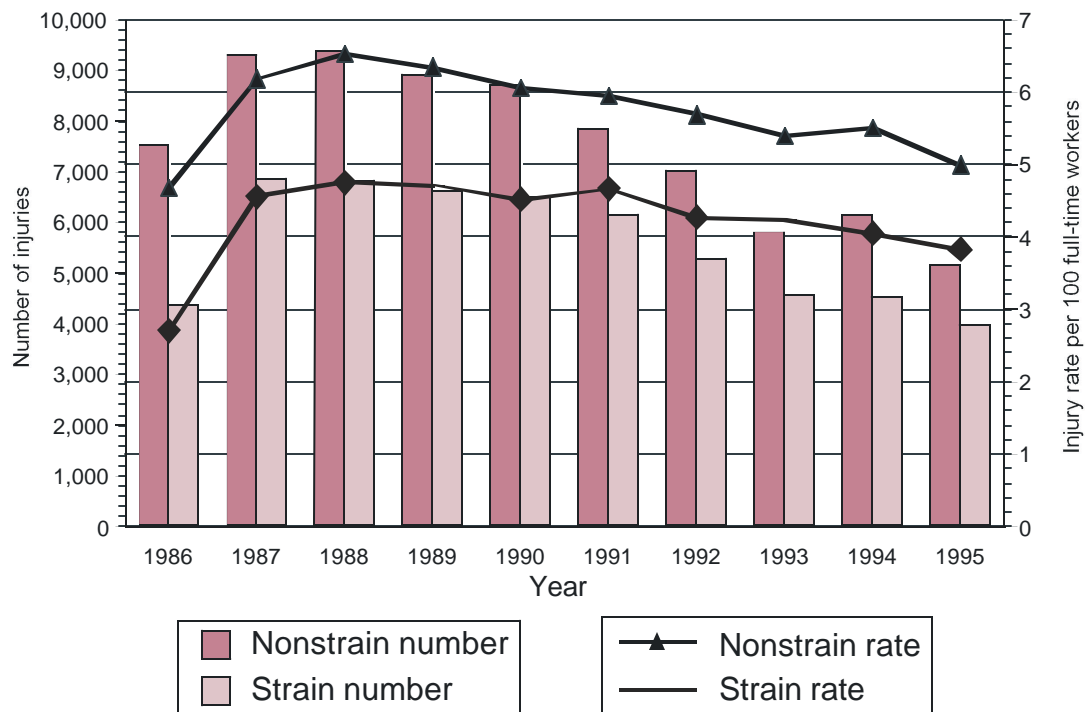
Nature of injury	Number of cases	Lost workday cases (%)	Mean days lost work	Total days lost	Total statutory days
Sprains and strains	52,939	87.0	35.31	1,869,202	59,874
Fracture	13,487	71.8	36.57	493,066	43,175
Contusions	16,010	81.3	18.90	302,523	10,970
Lacerations	21,543	33.6	5.36	115,546	4,245
Hernia	1,117	84.2	31.90	35,635	45,450
Crushing	1,499	71.8	20.32	30,421	5,550
Amputation or enucleation	665	75.3	44.14	29,352	325,173
Dislocation	600	80.0	39.80	23,879	350
Burn, heat	1,351	64.8	13.43	18,115	0
Electric shock	247	82.2	54.74	13,520	0
Joint, tendon, or muscle inflammation or irritation	485	78.6	26.94	13,065	0
Noncontact electric arc burn	983	73.6	10.02	9,854	0
Abrasions	1,139	61.7	6.74	7,675	0
Brain concussion	185	88.1	36.05	6,633	6,000
Electrical burn	195	76.4	19.50	3,802	50
Burn, chemical	701	56.5	4.71	3,305	0
Dust in eyes	1,559	41.2	1.59	2,479	0
Poisoning	244	50.4	2.74	669	0
Other specified causes	1,255	75.3	27.28	34,237	5,400
Multiple injuries, unspecified	9,093	75.5	29.77	270,626	69,480
Other unspecified injuries	5,847	81.6	36.70	214,558	9,000
<b>Total</b>	<b>131,144</b>	<b>73.2</b>	<b>26.28</b>	<b>3,498,162</b>	<b>584,717</b>

Source: Mine Safety and Health Administration data.

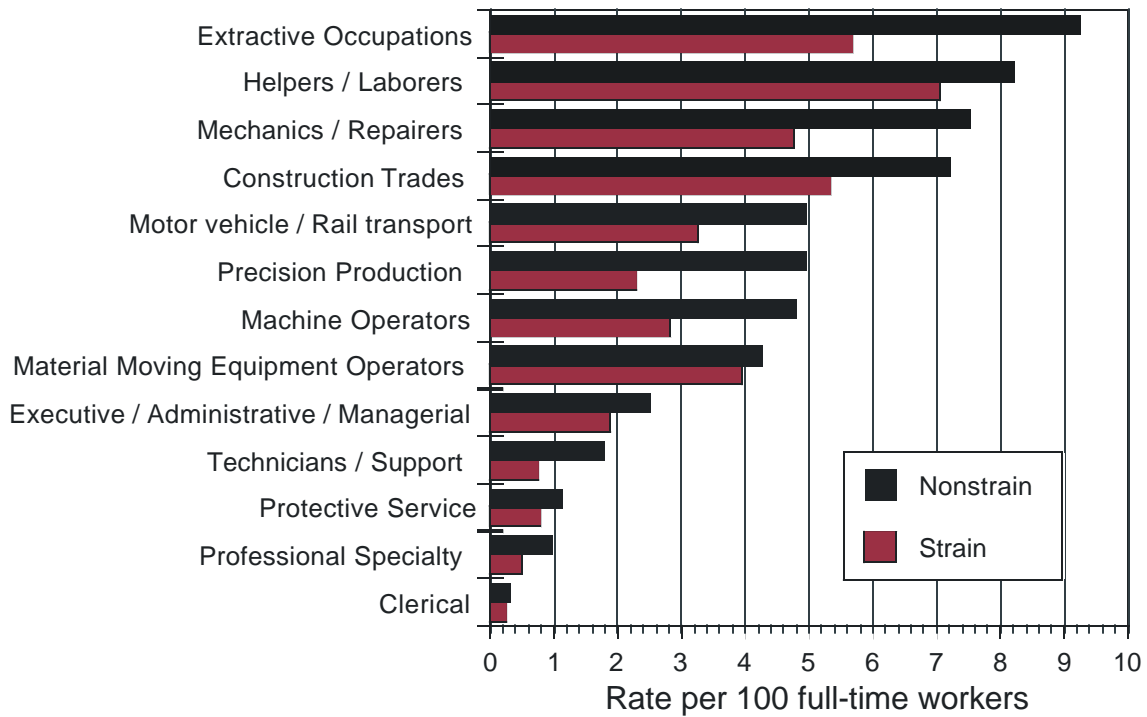
**Table 4A-4.—Coal operators: nonfatal injuries, 1986-1995, by work activity. Number of cases, percentage of cases with one or more lost workdays, mean days lost work per case, total days work lost for all cases, and statutory days charged for all cases.**

Work activity	Number of cases	Lost workday cases (%)	Mean days work lost	Total days lost	Total statutory days
Materials handling	40,469	77.3	29.25	1,183,702	163,034
Using or operating tools or machinery	32,899	64.0	20.49	673,893	134,133
Vehicular and transportation operations	19,000	80.4	30.58	580,959	95,945
Constructing, repairing, or cleaning	20,963	68.8	24.22	507,737	131,235
Bodily movement	12,373	78.4	30.00	371,211	22,065
Other	4,295	74.4	29.16	125,236	27,566
Unspecified	1,145	88.5	48.41	55,425	10,750
<b>Total</b>	<b>131,144</b>	<b>73.2</b>	<b>26.68</b>	<b>3,498,162</b>	<b>584,717</b>

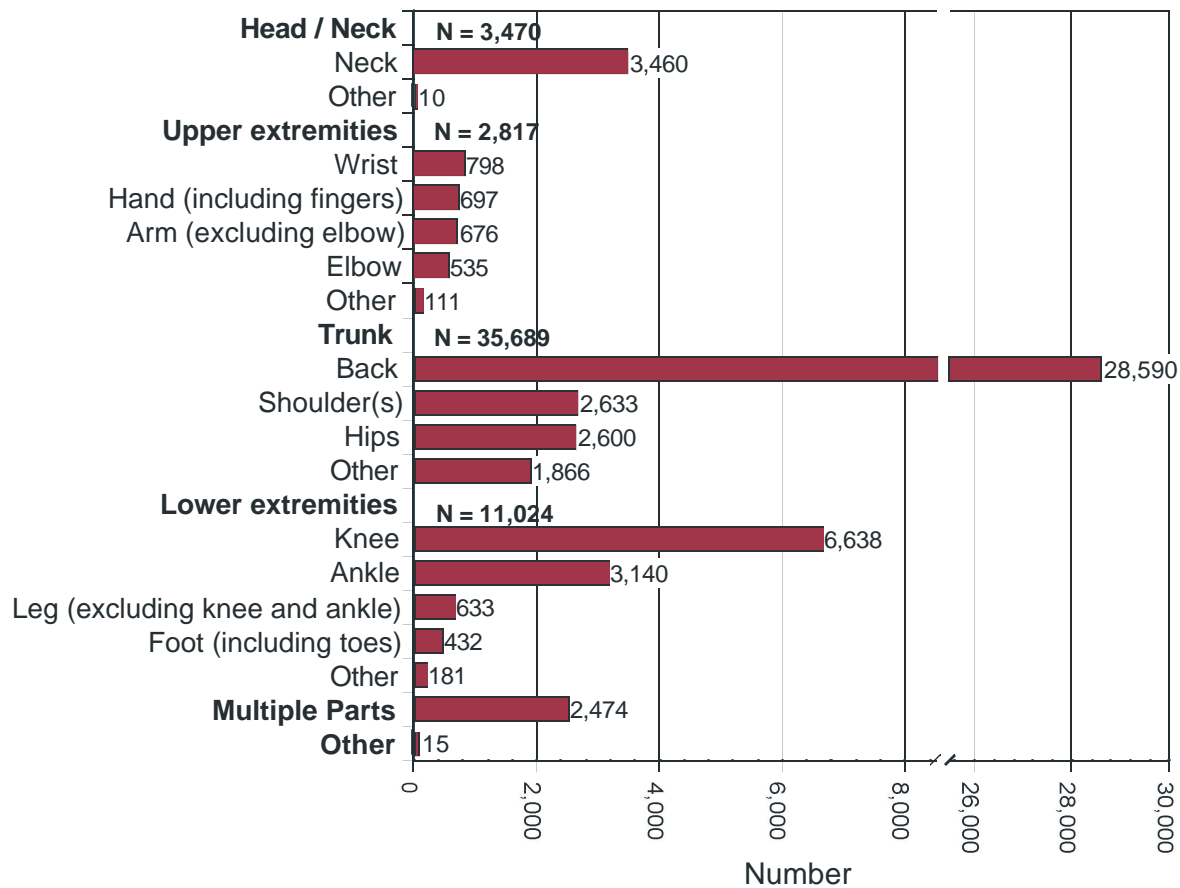
Source: Mine Safety and Health Administration data.



**Figure 4A-7.—Coal operators: nonfatal injuries, 1986-1995. Number and rate (per 100 workers) of strain and nonstrain injuries by year. (Source: MSHA data)**



**Figure 4A-8.—Coal operators: nonfatal injuries, 1986-1995. Rate (per 100 workers) of strain and nonstrain injuries by U.S. Bureau of the Census Occupation Division. (Data on occupations were missing for 3,726 out of 131,144 cases (1.8%).) (Source: MSHA data)**



**Figure 4A-9.—Coal operators: number of (nonfatal) strain injuries by body part injured, 1986-1995.**  
 (Source: MSHA data)



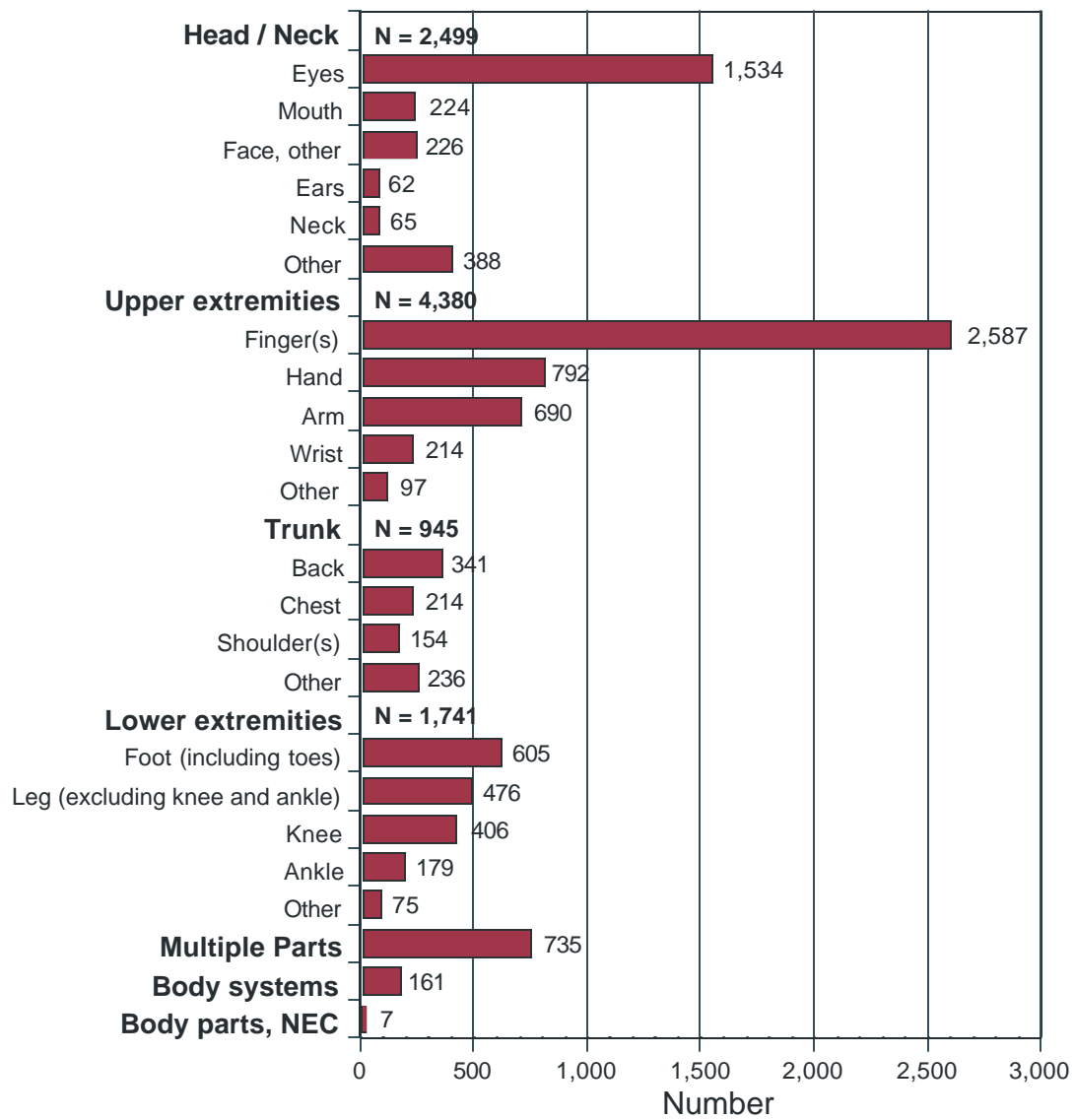
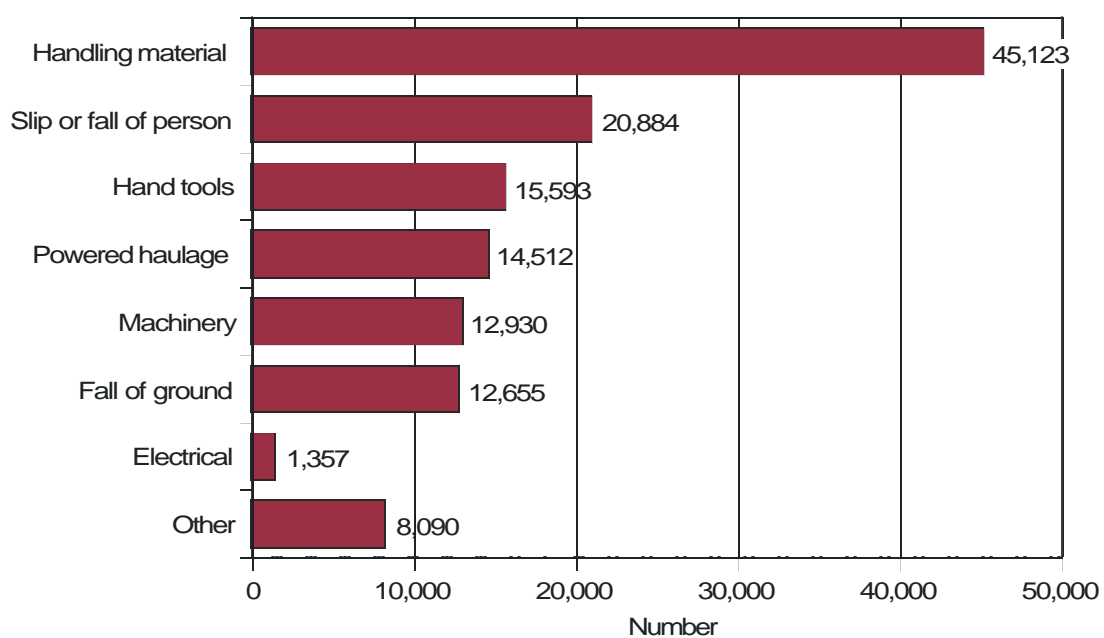
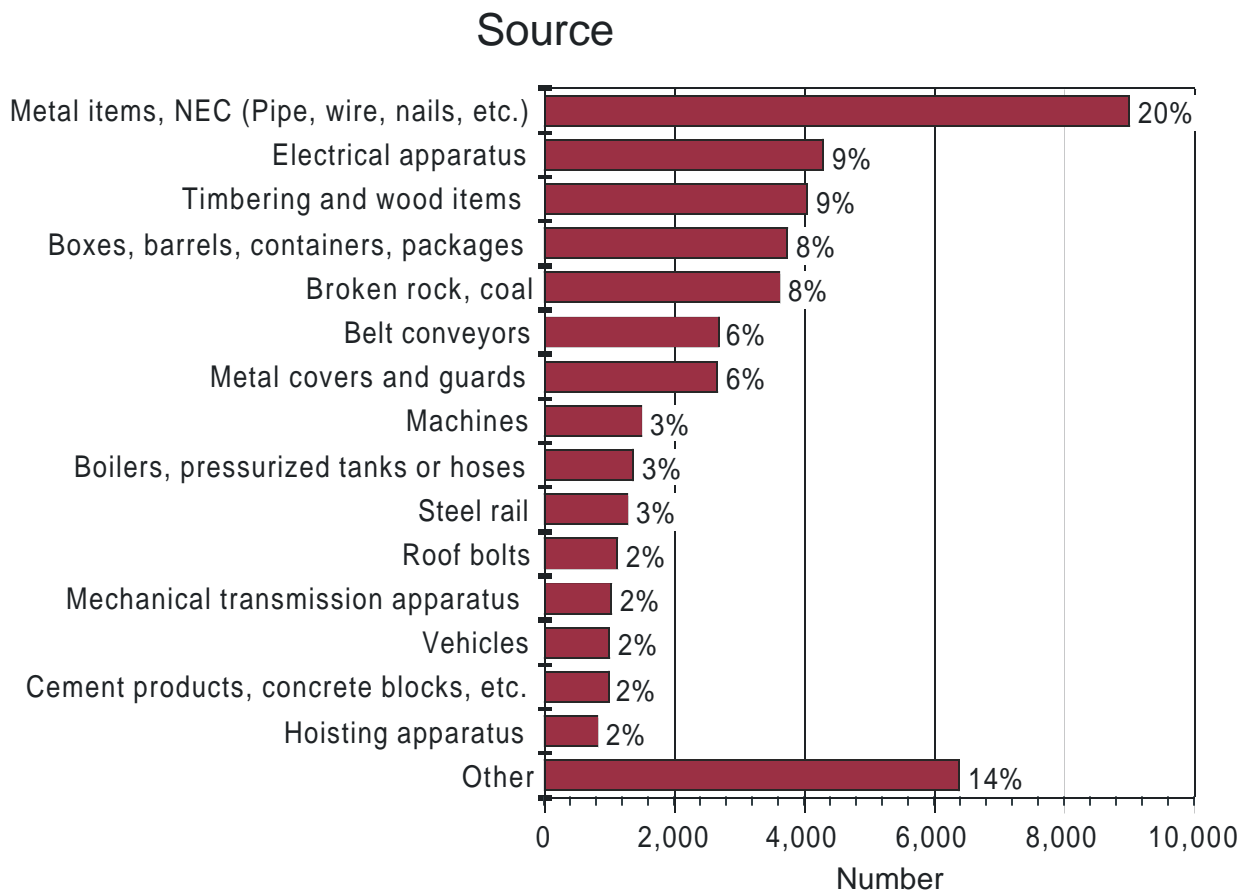
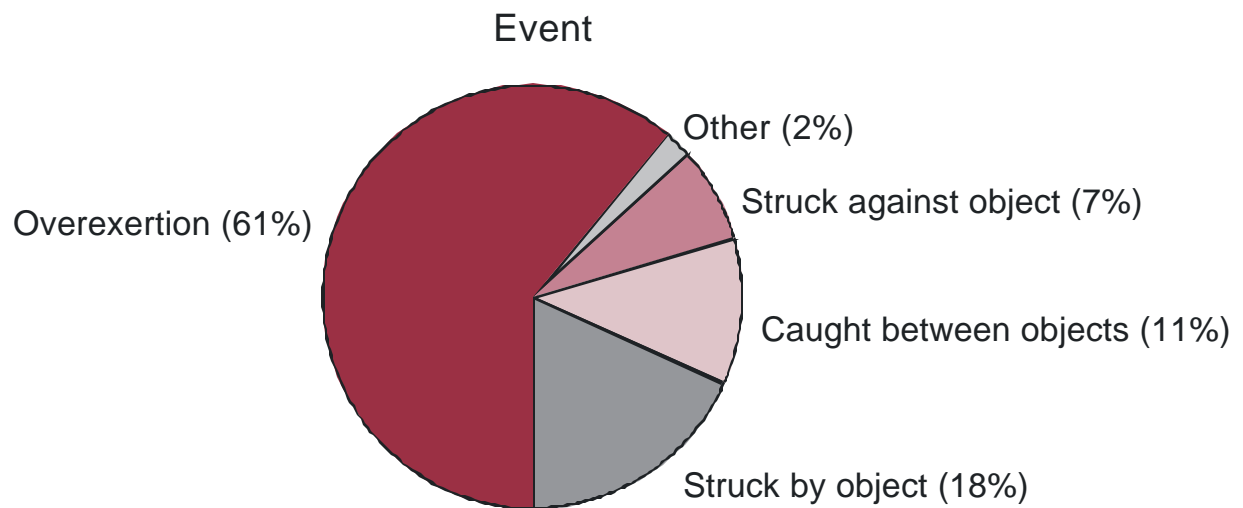


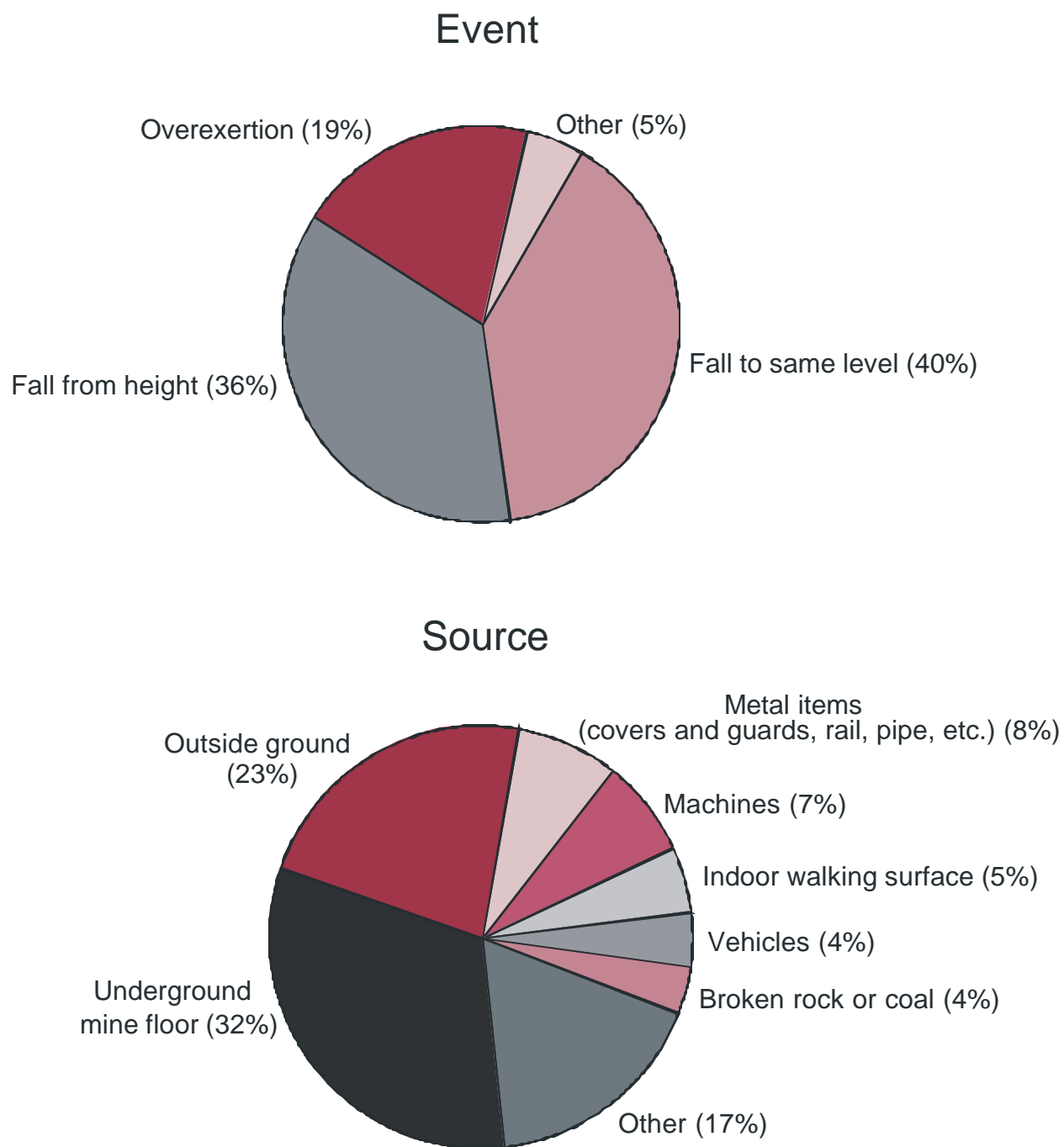
Figure 4A-10.—Coal operators: number of (nonfatal) nonstrain injuries by body part injured, 1986-1995. (Source: MSHA data)



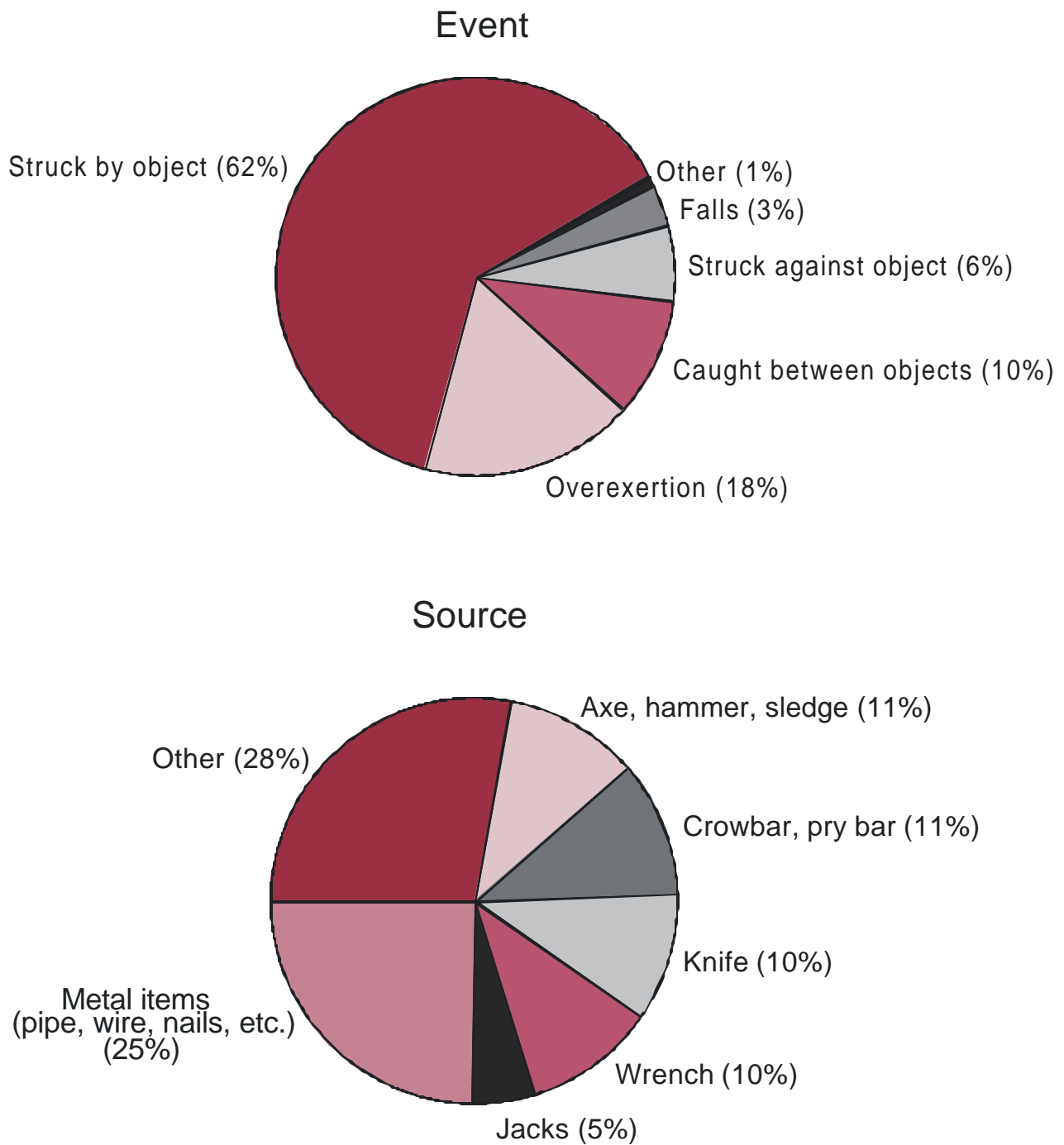
**Figure 4A-11.—Coal operators: number of nonfatal injuries by MSHA accident classification, 1986-1995. (Source: MSHA data)**



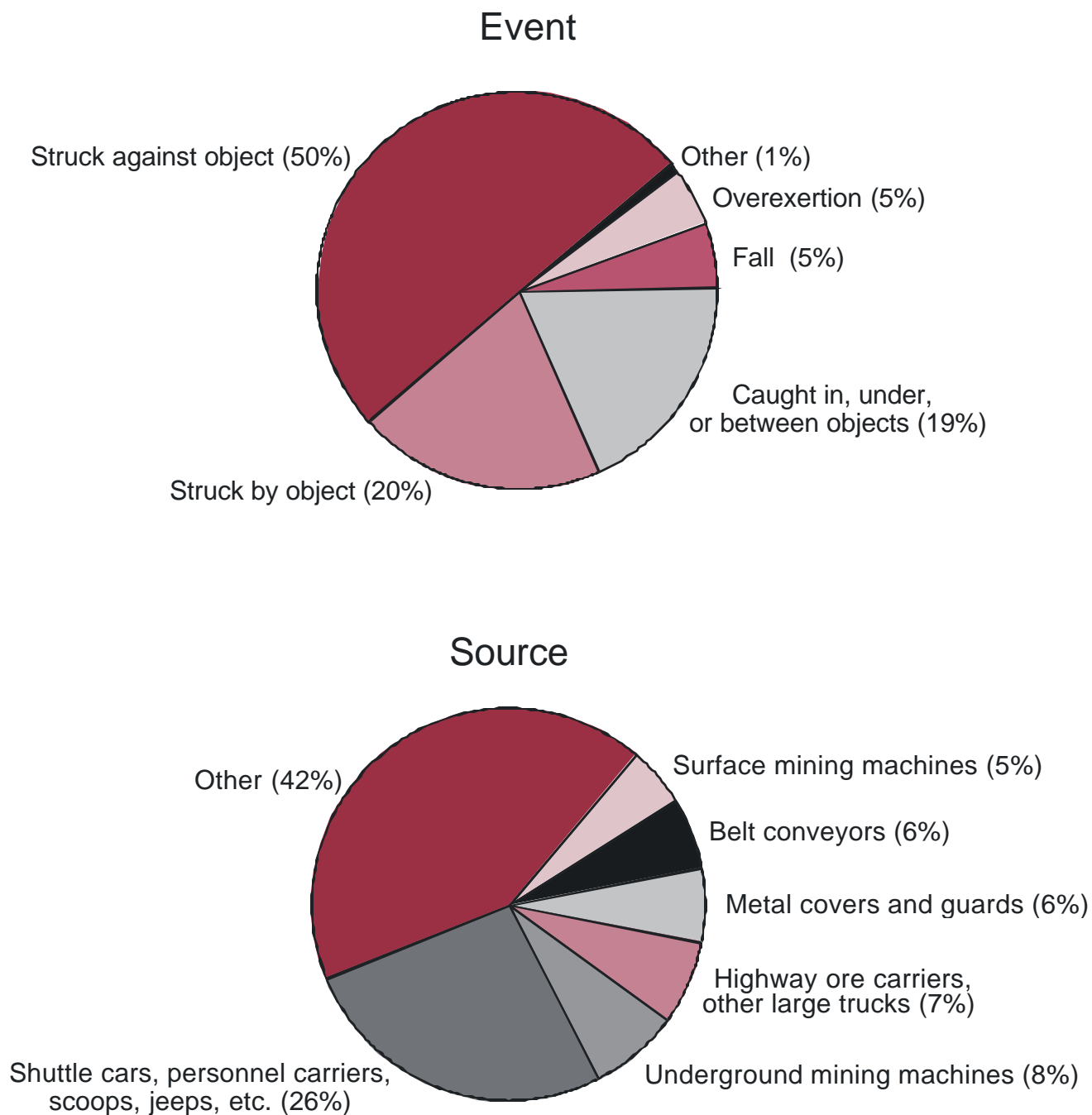
**Figure 4A-12.—Coal operators: nonfatal material handling injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 45,123). (Source: MSHA data)**



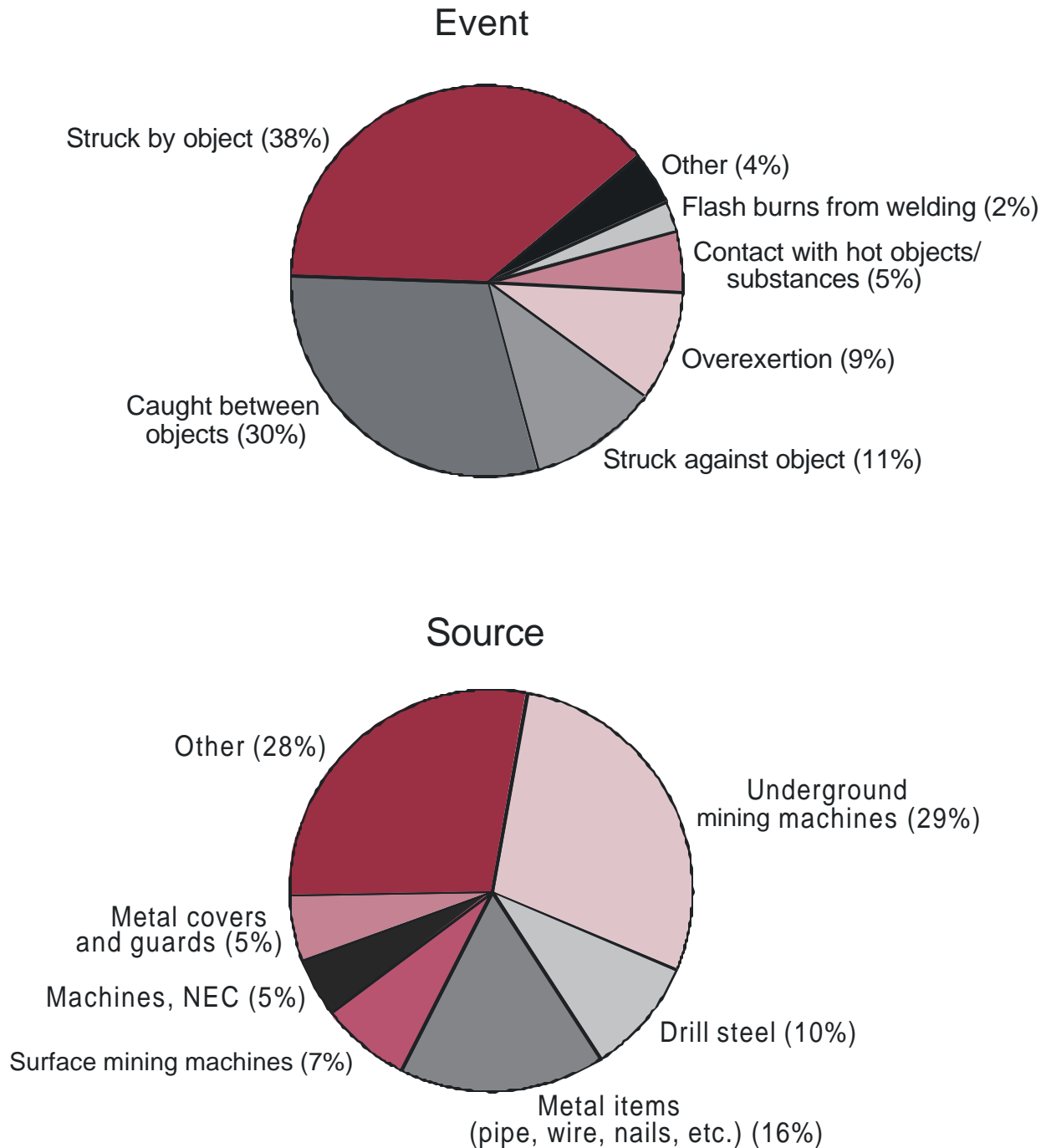
**Figure 4A-13.—Coal operators: nonfatal fall injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 20,884). (Source: MSHA data)**



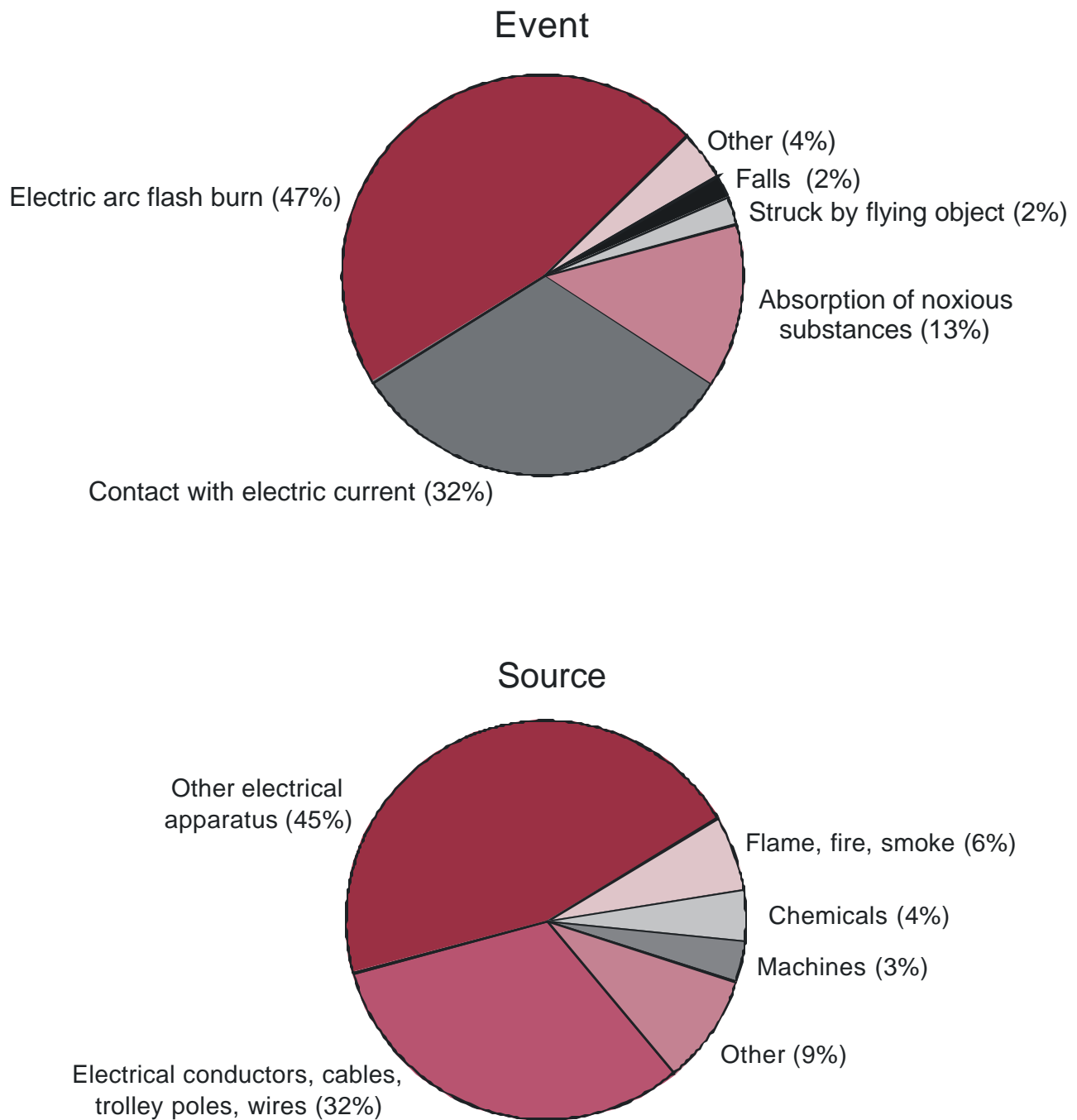
**Figure 4A-14.—Coal operators: nonfatal hand tool injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 15,593). (Source: MSHA data)**



**Figure 4A-15.—Coal operators: nonfatal powered haulage injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 14,512), (Source: MSHA data)**



**Figure 4A-16.—Coal operators: nonfatal machine injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 12,930). (Source: MSHA data)**



**Figure 4A-17.—Coal operators: nonfatal electrical injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 1,357). (Source: MSHA data)**



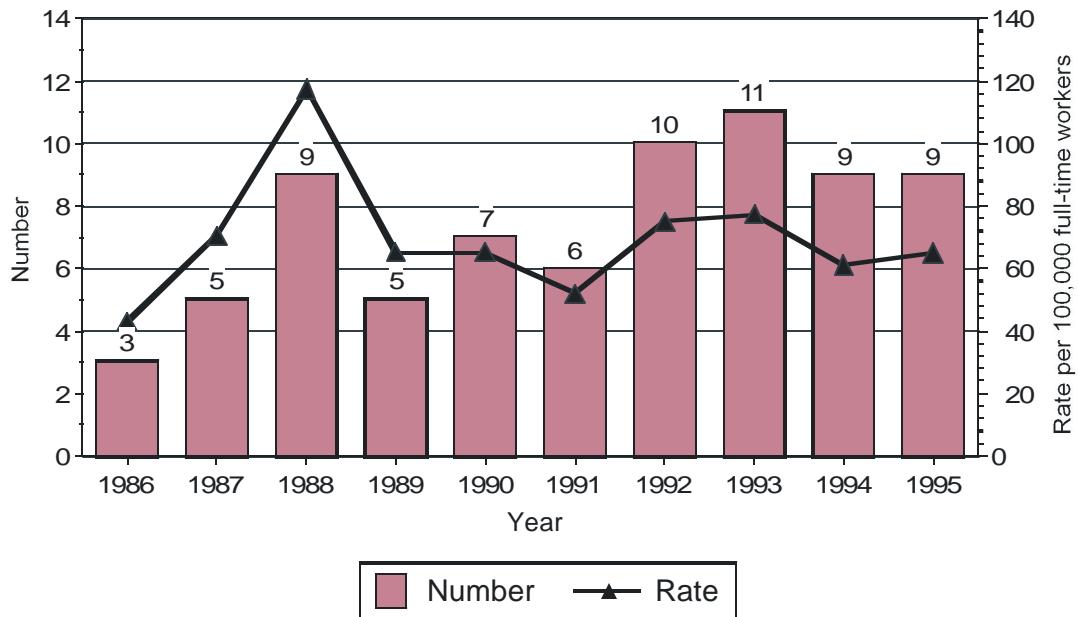


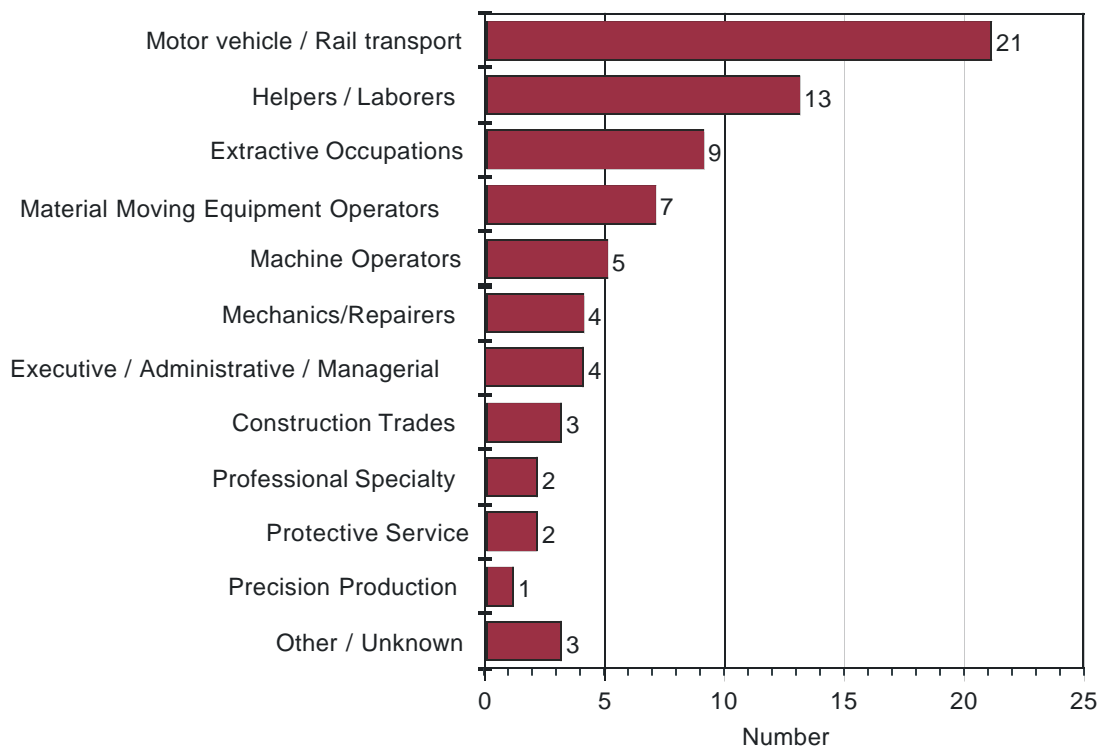
Figure 4A-18.—Coal contractors: number and rate of fatal injuries (per 100,000 workers) by year. (Source: MSHA data)

Table 4A-5.—Coal contractors: number and average annual rate (per 100,00 workers) of fatal injuries by subunit, 1986-1995.

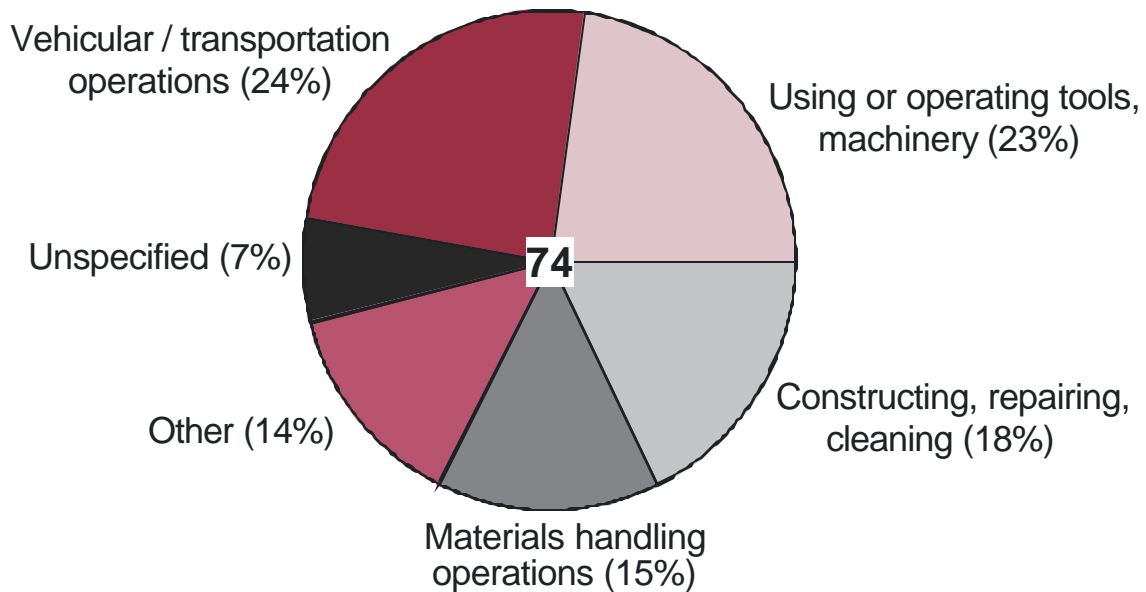
<u>Mining operation</u>	<u>Number, 1986-1995</u>	<u>Average annual rate per 100,000 full-time workers</u>
<b>Underground mines:</b>		
Underground operations	2	*
Surface operations	13	68.3
<b>Surface mines:</b>		
Strip	36	64.4
Auger	4	396.7
Culm Bank	1	*
Dredge	0	*
<b>Independent shops/yards</b>	1	*
<b>Preparation Plants</b>	17	75.87
<b>Office</b>	0	*
<b>Total</b>	74	63.1

\* Rate not calculated because there were fewer than 3 fatalities

Source: Mine Safety and Health Administration data.

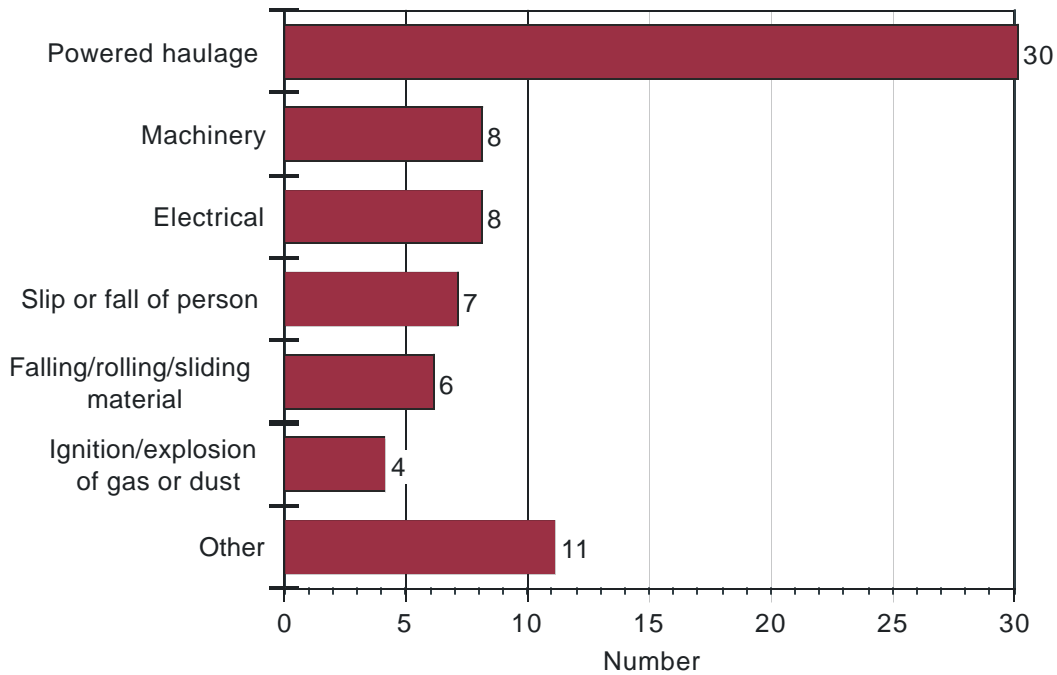


**Figure 4A-19.—Coal contractors: number of fatal injuries by U.S. Bureau of the Census Occupation Division, 1986-1995. (Source: MSHA data)**

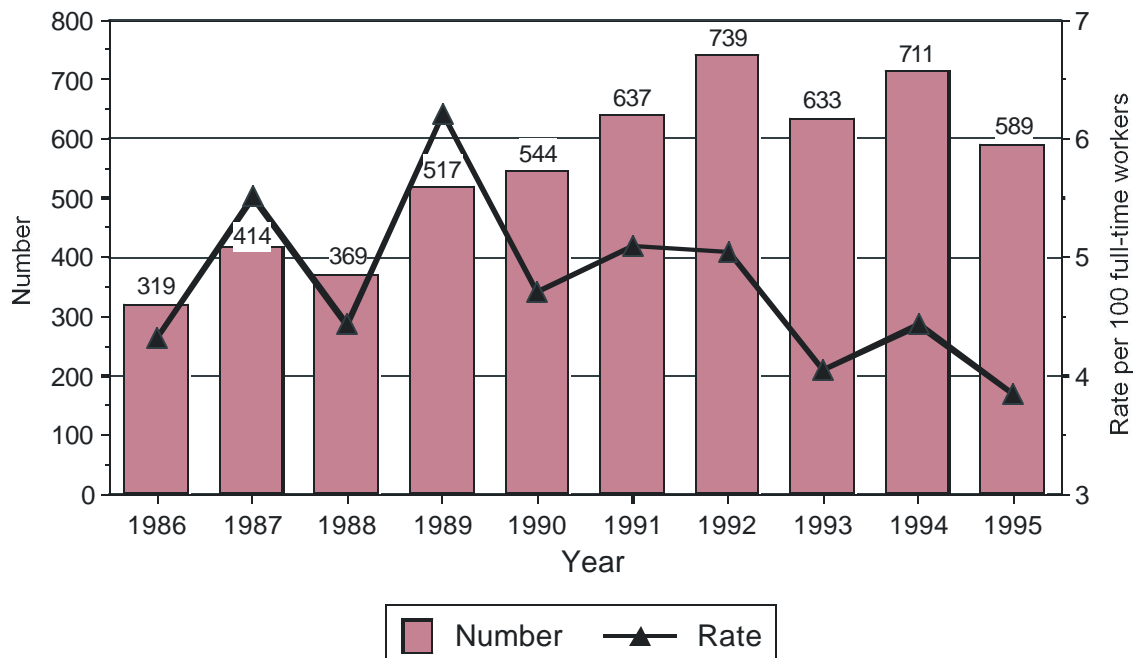


**Figure 4A-20.—Coal contractors: percent of fatal injuries by work activity, 1986-1995. (Source: MSHA data)**





**Figure 4A-21.—Coal contractors: number of fatal injuries by MSHA accident classification, 1986-1995. (Source: MSHA data)**

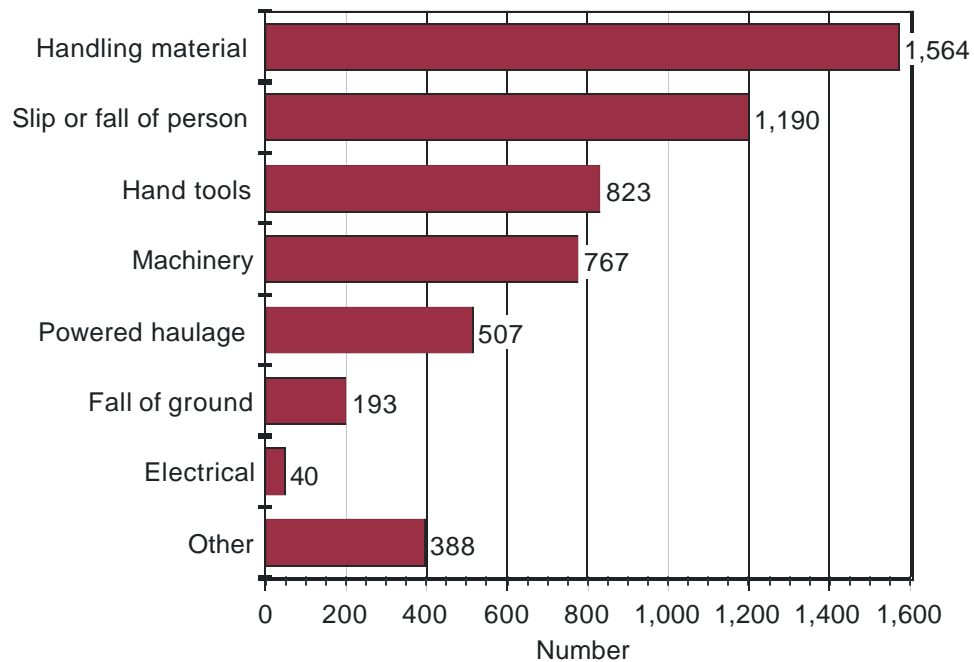


**Figure 4A-22.—Coal contractors: number and rate (per 100 workers) of nonfatal injuries by year. (Source: MSHA data)**

**Table 4A-6.—Coal contractors: number and average annual rate (per 100 workers) of nonfatal injuries by subunit, 1986-1995.**

<b>Mining operation</b>	<b>Number, 1986-1995</b>	<b>Average annual rate per 100 full-time workers</b>
<b>Underground mines:</b>		
Underground operations	1,375	15.87
Surface operations	623	3.27
<b>Surface mines:</b>		
Strip	1,911	3.42
Auger	75	7.44
Culm Bank	10	1.69
Dredge	2	1.22
<b>Independent shops/yards</b>	26	17.55
<b>Preparation Plant</b>	1,379	6.15
<b>Office</b>	71	0.76
<b>Total</b>	<b>5,472</b>	<b>4.67</b>

Source: Mine Safety and Health Administration data.



**Figure 4A-23.—Coal contractors: number of nonfatal injuries by MSHA accident classification, 1986-1995. (Source: MSHA data)**